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Discovery of Red Deer-horns and other Animal Remains, in the Bed of the River Ribble; with some Account of the Ancient Denizens of the Forests of Blackburnshire and Bowland. By Captain H. W. FEILDEN.

IN the year 1865, when certain improvements were going on for deepening the bed of the River Ribble, below the town of Preston, the dredgers came upon a horn and bone bed. Mixed with the soft mud of the river the dredging-machine brought to light great quantities of antlers and skulls of the red deer, massive frontal and other bones of wild cattle or bubali, enormous skulls and jaws of wild boars, goats, and along with them two human skulls.

All these remains were more or less injured by the dredging-machine; no antler was brought to the surface in a perfect condition, though many pieces remained two and three feet long. These fragments were in such quantities that a friend of mine sent a cart and two men to the spot, and in a day they collected nearly a load. Not unfrequently fine and perfect heads of red deer are dragged from the bed of the Ribble by the salmon net-fishers, and there is now at Feniscowles Hall, near Blackburn, a magnificent head with fourteen points and of great weight and thickness, taken out of the Ribble a few years ago. Its condition is as perfect as if it had just come from a deer park, the only sign of age being the rich black colour the horns are stained from immersion.

Why or wherefore this immense collection of animal remains should have occurred at this one spot, I cannot explain satisfactorily; it may have been the meeting point of the tidal and river waters, or else the configuration of the river bed and banks may have caused a great eddy at this point, or it may have been the result of one great flood.

Until comparatively late periods the country in which the Ribble and its tributaries rise and flow was a great forest; the names of Bowland and Pendle Forests still linger, but the antlered herds are gone. The last herd of wild red deer in Bowland Forest was destroyed in 1805. The wild cattle that used to be kept in Gisburne Park are now extinct; the herd had gradually dwindled, and, as there was no chance of the breed being perpetuated, the two or three remaining were slaughtered about seven years ago. I believe an experiment was tried of crossing them with tame cattle, but this only prolonged the breed for one generation, the mixed breed being barren.



That learned antiquary Dr. Whitaker, the late vicar of Whalley, Lancashire, gives in his 'History of Whalley' many interesting and authentic accounts of the great Forest of Blackburnshire and its tenants, from the time of the Saxon till 1805, when he mentions the destruction of the last wild herd of red deer that roamed in Bowland.

This great work of Dr. Whitaker's is more fitted for the shelves of the antiquary than the naturalist; but I will make a few extracts from the work, which I think will be of extreme interest to the naturalist, as they give authentic information in regard to several animals now extinct in this part of the country.

Dr. Whitaker, after a long and learned analysis of the forest laws, lists of the various seneschals of the Forest, from 1178 till the time of Queen Anne, lists of the animals of chase and various other matters; thus describes the Forests of Blackburnshire and Bowland, as "high and barren tracts, rejected at the first distribution of property when townships were planted, and commons mered out in the fertile and sheltered grounds beneath: in this state they remained among the last retreats of the wolf and the abode of stags and roes, and bubali or wild cattle, which are mentioned by Leland as remaining not long before his time at Blakeley, and of which tradition records that they were transplanted into the Dean's or Abbot's Park of Whalley, whence they are reported, on the same evidence, to have been removed after the dissolution to Gisburne Park, where their descendants still remain."

In Dr. Whitaker's work is the fragment of a most interesting diary kept by Nicholas Assheton, of Downham, Esq., for the year 1617 and part of 1618. Downham, still the residence of the Assheton family, is built at the base of Pendle Hill, within the limits of the ancient forest of Blackburnshire. Mr. Assheton, at the time he kept this diary, was a young and active man, engaged in all the business and enjoying all the amusements of the country. I will pass over matters of historical and general interest and confine myself to extracts from his entries relating to sporting, as they throw light upon the animals and birds then existing in this part of the country: some of the former are now extinct. He mentions, however, in this period, sixteen fox-chases, ten stag hunts, two of the buck, as many of the otter and hare, one of the badger, four days of grouse shooting, the same of fishing in Ribble and Hodder, and two of hawking.

Some of the entries are worth perusal to the naturalist, and I will therefore give examples.

"1617. May 2d. Hunting the otter: killed one; taken another, quick, at Salley.

"June 24. To Worston Woode. Tryed for ye foxe; found nothing. Towler lay at a rabbit, and wee stayed and wrought and took her.

"June 25. To the fox-hunting, 1 found in the warren. I hounded and killed a bitch-fox. Wee to Salthill; ther wee had a bowson (badger), we wrought him out and killed him.

"Aug. 12.* The king hunted and killed a buck.†

"Aug. 13. Mirescough. The king killed five bucks.

"Aug. 16. Hoghton. The king hunting; a great companie; killed affore dinner a brace of staggs. Verie hot; soe he went in to dinner; wee attend the lords table: and about 4 o'clock the king went downe to the Allome Mynes, and was there an hower and viewed them pcisely, and then went and shott a stag and missed. Then my Lord Compton had lodged two brace. The king shott again, and brake the thigh bone. A dogg long in coming, and my Lo. Compton shott again and killed him.

"Aug. 23. Downham. Hunting fox on Warsoe; killed one, another to Pendle; killed another fox, and earthed another, afterwards killed in the hole.

"Aug. 30. Went forth with Gregson, but light of nothing. To the keeper's; hee with us betwixt Crosdale and top of Burne, and into Whitendale, to have killed a stag with peece, but found none.

"Sept. 1. To Totteridge. Ralph Anderton shott a stag at topp of the east end of Totteridge. The keepers two hounds cast off; brave sport! killed him in the Fence. Soe to Thom. Parker's.‡ Broke him up; eat the chine and the liver.

"Sept. 6. All but Mr. Chancellor into Bolland. At Stable Oak. A stag killed at Harden, and another a little above which made excellent sport.

"Sept. 17. To Batterise, to Burnside and Whitendale, overrun with goode deare; a knubb was killed and a calf.

* Mr. Assheton was in attendance on King James the First, with the great majority of the neighbouring gentry. The king was now making his royal progress from Scotland to England, and was on his way to Hoghton Tower, where he was received by Sir Richard Hoghton with becoming state.

† This was in Myerscough Forest, near Garstang: the forest has long ago disappeared, and it is now under the plough.

‡ Parker, of Browsholme or Broxholme; still in possession of the family.

"Oct. 27. A hunting. Found no fox. Killed a hare.

"Oct. 29. Riding to Worston, brother Houghton and Coz. Henry hawking; lost ther hawke.

"Nov. 4. Downe to the water: Dick killed a mallard and a duck at one shoote. Sherborne killed a water ousle, 2 pigeons and a thrush.

"Nov. 14. Bro. Sherborne went to th' Arrope and Skelfshaw Fells with gunnes; shot at a morecock, struck feathers off, and missed.*

"Nov. 24. To Downham by Harropwell. Had some sport at moorgame with my piece, but killed not.

"Dec. 23. To Rowe Moor, and killed ther 3 heath cockes."

We find, therefore, that of the animals of chase mentioned in this diary, three species are extinct as *fera natura*, in this locality, at the present day; namely, the red deer, the fallow deer or buck and the bowson or badger. The otter still tenants the Rivers Hodder and Ribble; foxes are numerous; rabbits are more so, I daresay, than in Mr. Assheton's time, and the same may be said for the hare. Of birds the mallard and duck are still to be found, though one is not likely to get many double shots as Dick did. Water ouzels are as numerous, I should say, as when Sherborne went to the river bank gunning two hundred and fifty years ago. Two days ago I was on the banks of the Ribble, and saw them flitting merrily from stoue to stone. Pigeons and thrushes still abound.

It appears from this diary that the result of three days' grouse shooting was three killed and one feathers struck off. Taking into consideration the poorness of the fire-arms then in vogue, I fancy the moor-game must have been less abundant than at present, judging from the result of the bags. Grouse are now numerous on the Fells that bound the old Forests of Blackburnshire and Bowland.

In a survey of Bowland Forest, taken in the time of Cromwell's usurpation, 12th October, 1652, twelve keepers are enumerated "for the deere both red and fallow," and the "redd deere" are estimated at twenty, worth £20, and of "fallow deere" forty, valued at £20; that is, there were twelve keepers for sixty deer! the stock must have been poached and destroyed during those troubled times.

As I have before mentioned, the last remnant of those great herds that in early times grazed on the banks of the Hodder and Ribble,

* No shooting flying till many years after.

and the mountain sides of Pendle and the barren tract of Bowland, was destroyed in 1805.

H. W. FEILDEN.

Pleasington, Blackburn.

Notes on the Folk-lore of Zoology. By EDWARD R. ALSTON, Esq.

(Continued from Zool. S. S. 979.)

II. BIRDS.

Many of the popular superstitions and beliefs regarding this class have been noticed by Mr. Harting, in his excellent papers on "The Birds of Shakspeare," to which I will from time to time refer.

Eagle.—The eagle, in southern poetry and fable, is the bird of the gods, the one that soars nearest to the sun, the only creature that can brook the mid-day ray with unveiled eye (Harting, Zool. S. S. 355, 393). But in the northern myths he is hardly treated with so much respect (perhaps because he is better known, if it be not treason to say so); there the bold falcon is the favourite of heaven, while the larger and more sluggish eagle is associated with the giants, and is a common form for those foes of the gods to assume. Under the name of *Hrāfwelgr* (corpse-devourer), he is also the emblem of the wind, but in one or two instances is assigned to Odin as a companion (*Simrock*). According to Loyd and other writers, the northern peasants relate that the golden eagle destroys deer and other large animals by the following ingenious device:—they soak their wings in water, cover them with sand, and then swoop against the heads of their victims, which, being thus blinded and wild with pain, are then easily driven over the nearest precipice.

Falcons and Hawks.—The northern gods, as already stated, loved the noble falcon, and often took his shape, or at least assumed his pinions when on a journey (*Simrock*). In mediæval romance and ballad the good knight's falcon not unfrequently plays the part of a carrier-pigeon, and is sometimes gifted with the power of song and even of speech. Thus, in the fine old Scotch ballad of "My Gay Goshawk," the hero sings—

"But weel's me on ye, my gay gosshawk,
Ye can baith speak and flee,
Ye shall bring a letter to my love—
Bring an answer back to me.

* * * * *

" O first he sang a merry song,
 An' syne he sang a grave,
 An' syne he picked his feathers gray,
 An' her the letter gave."

So noble were the falcon's instincts that when a great hero died his favourites would wander all over Europe till they found a new lord worthy of their old one!

Kestrel.—The ancients believed the kestrel to be the friend and protector of pigeons, defending them from other falcons, and inducing them to remain at home. Wherefore the bodies of four kestrels, according to Pliny and others, should be enclosed in newly-painted earthen pots, and buried at the four corners of the dovecote, and then the pigeons will be found not to stray from the place. The old Scotch name of "stanchel" was probably a corruption of *stand-gale*, from its well-known habit of hovering in the wind; hence also its local name in Angus, "Willie-whip-the-wind." (Jamieson, 'Scottish Dictionary.')

Hen Harrier.—My friend Mr. R. Gray informs me that in the Hebrides, where the magpie is unknown, this species takes its place as a bird of augury. "Should any one be more than ordinarily fortunate on a certain day, it is said that he must have seen the 'clamhanluch' (from *clamhan*, a hawk, and *luch*, a mouse) or hen harrier." This bird is very abundant in these islands.

Owls.—The owl is in all lands the typical bird of superstition; its noiseless flight, its horrible nocturnal cries, and the ghostly character of its usual haunts, all combine to connect it with the powers of darkness. Accordingly all dramatists and novelists have used it freely in working up incantation and demoniac scenes. The curious and widely-spread legend of the owl being a transformed baker's daughter has been already noticed by Mr. Harting (Zool. S. S. 412). The same story, under other forms and applied to other species, will be again alluded to.

Water Ouzel.—The reputed power of this bird of walking along the bed of a river may, I think, be included among popular delusions, although a voluminous writer of the present day has declared it to be "an established fact."

Stonechat.—In the North of Scotland this bird is called the "clocharet" or "clocharn" (from *cloich*, a stone, and *ram*, a song? *Jamieson*), and is believed to be assisted by the toad in incubation. In the

Lowlands it is exempt from having its nest "harried" (*i. e.* robbed) by country boys on account of the awful curse which its notes are supposed to contain:

"Stane-chack,
De'il tak'
They wha harry my nest,
Will never rest,
Will meet the pest,
De'il brak' their lang back
Wha my eggs wad tak', tak'!"

(Chambers, '*Popular Rhymes of Scotland.*')

The usual Scotch name for both the stonechat and whinchat is "stane-chacker."

Wheatear.—Mudie informs us that the wheatear is a doomed bird in many parts of Northern England, because the peasants believe that to hear its note is a token of approaching death. He suggests that its habit of frequenting old church-yards, ruins and sepulchral "cairns" may be the origin of this superstition. In the Hebrides this bird seems to share the Gaelic name of the last species. Mr. Gray writes me concerning the wheatear or "clacharan:" "Being a migratory bird, this species is also the subject of anxious consideration on its arrival. When seen for the first time perched on a rock or stone it portends a bad year to the person who sees it; but when found perched on a grassy mound it is looked upon as a happy omen. Two friends, for example, who have not seen each other for some time happen to meet, and the one asks the other eagerly, 'Have you seen the clacharen yet?' 'Oh, yes!' is the reply, 'I have seen it on a sod—all right!' But it sometimes happens that an ominous shake of the head tells its own story."

Robin.—Both in England and Scotland the robin and the wren are represented by rural tradition as husband and wife; probably this is because the female redbreast shares the bright colours of the male, while both sexes of the wren are clothed in quiet and quaker-like garb: both are sacred from bird-nesters. In Scotland a popular rhyme informs us that

"The robin and the wren
Are God's cock and hen;"

Another version of which is said to be common in Warwickshire, *viz.*:—

"The robin and the wren
Are God Almighty's cock and hen;
The martin and the swallow
Are God Almighty's bow and arrow."

(Chambers.)

This association of the robin and the wren and the legend of the 'Babes in the Wood' are both very old: John Webster (17th century), in the 'Duchess of Malfi,' alludes to them thus:—

"Call for the robin redbreast and the wren,
Since o'er shady groves they hover,
And with leaves and flowers do cover
The friendless bodies of unburied men."

And Mr. Harting has noticed Shakspeare's and Isaak Walton's allusions to this charity of the "honest robin" (Zool. S. S. 418). Among the Scandinavians this species was sacred to the fiery-bearded Thor, and as the wren was also sacred to the northern gods, this may, after all, be the true origin of these fancies.

EDWARD R. ALSTON.

Stockbriggs, Lesmahagow, N. B.,
November, 1867.

(To be continued.)

Notes from Flamborough. By JOHN CORDEAUX.

OCTOBER, 1867.

October 14th. Arrived at my old quarters near the north landing-place at 3.30 P.M. In the evening walked along the north shore towards the light-house. Observed in the course of this walk several rock pipits, a kestrel and some thirty or forty lesser blackbacked gulls, with two exceptions young birds. I also saw a single skua (*Lestris catarractes*). This northern side of the headland of Flamborough, from the northern landing-place to the lighthouse, is extremely wild and picturesque. Time and tide have indeed wrought many mighty changes in this coast-line, since it first arose a long unbroken and gigantic barrier of limestone, stemming the fierce onslaught of the wild North Sea. A year has passed, and all is changed save the destroyer: The great waves yet rush landward, line beyond line, even as they did in those remote ages, bursting in thunder at the root of the mountain, ever unceasingly night and day, summer and winter,

striving to breach these solid bastions; and well have they done their work, now the white limestone cliffs are a ruin; mighty isolated columns of chalk, once portions of the cliff, now standing alone, the outposts of the slowly retreating land. Here the wave has worn a deep and narrow gorge far inland, there again the cliff rises beyond the coast line, as yet unsubdued; its base, however, we perceive is worn completely through, forming a mighty archway, through which the sea is ever racing in the wildest confusion. Give it time and it will fret away the seaward pillar, and then the face of the cliff will shoot forward and one more bastion will have been carried.

It was dark when I turned homewards along the cliffs. The wind had risen, sweeping upwards, moaning along this broken and deserted coast in a most melancholy cadence; drifting inward the gray sea fog, which in a few minutes wrapped the headland as in a shroud; even the blaze of the lighthouse was obscured—

“The white mist, like a face-cloth to the face,
Clung to the dead earth, and the land was still.”

That night an 800-ton barque went on shore within a quarter of a mile of the light-house. It proved a fortunate circumstance for the fishermen, who got £200 for getting her off the rocks, which, thanks to the high spring tide, they did before morning, and £35 more for taking her to Sunderland.

October 15th. Saw at the house of Mr. Bailey, two skuas, shot off this coast on Saturday, the 12th. Both were young birds—the larger of the two *Lestris pomarinus*, the other *L. Richardsonii*. The pomarine skua was procured in a curious manner—Mr. Bailey had shot at and slightly wounded a kittiwake, which fell at some distance from his boat; before he could get near it the disabled bird was attacked and killed by the skua; it speedily, however, fell a victim to its temerity, and on the approach of the boat was shot, clinging to the body of the gull. On the same day Mr. Bailey saw a Buffon's skua in mature plumage, but failed to bag it. Many hundreds of kittiwakes were seen about the headland on the 14th and 15th, and I was told that on the latter day upwards of one hundred were shot and brought in by one boat. I deeply regret to write that this graceful and trustful gull is threatened with speedy extinction at this famous breeding-place; thousands have been shot in the last two years to supply the “plume trade.” The London and provincial dealers *now* give one shilling per head for every “white gull” forwarded; and the slaughter

of the poor birds during the season affords almost constant and profitable employment to three or four guns. One man, a recent arrival at Flamborough, boasted to me that he had in this year killed with his own gun four thousand of these gulls; and I was told that another of these sea-fowl shooters had an order from a London house for ten thousand. No wonder the kittiwakes are rapidly disappearing. There has this year been a marked diminution of the great breeding colony in the Speeton cliffs. The shooting commences as soon as the poor birds return to their summer quarters, and is carried on without intermission on every fine day in the spring, summer and autumn. A few years more and the glory of Flamborough will have departed. Can nothing be done to check this cruel, shameful and shortsighted destruction of our beautiful sea-fowl? This slaughter is going on, not only at Flamborough, but at every other favourable position round the coast, and will continue, unless our fair countrywomen are moved by compassion, or find some substitute more novel and taking than the all-prevailing plume. Let them persist in wearing sea-bird feathers, and the end is indeed not far distant. Future generations, when they flock to the sea-coast during the pleasant summer days, will only hear the tradition of the sea-birds home. The grand scenery of our storm-broken coasts will remain, but the winged multitudes which once gave life and animation to these lonely headlands will for ever have disappeared, the victims of a passing folly. Will not some pen more able than mine write an appeal powerful enough to melt the heart of even the most devoted votary of fashion—for women are proverbially pitiful, and I am sure will never countenance a custom indulged at such a cost? The young kittiwake is particularly in request by these feather-makers, as the rich black markings on the plumage contrast favourably with the pure white of the under parts and pearl-gray of the back. Often a rare gull is procured by these local gunners: these birds generally find their way to some collector; but this is not always the case, and many a valuable capture is sent away amongst a heap of the common species to be cut up for plumes. A young Iceland gull (*L. Icelandicus*) was shot on Saturday the 12th. I was told the Iceland gull is not uncommonly met with at Flamborough during the autumn and winter, and about half a dozen are shot by the gunners every year. The lesser gull has also been frequently killed, both at Flamborough and the Bridlington coast; two in immature plumage were shot on the 12th. *L. eburneus*, *L. Sabini* and *L. glaucus* have been killed at Flamborough. Of the terns the

common and arctic are those most frequently met with. I examined several skins of both species. Several Sandwich and black terns were shot during the autumn, and a solitary whitewinged black tern, I was told, seen this year in the neighbourhood.

A considerable flock of petrel (*Thalassidroma pelagica*) arrived in Bridlington Bay during the first week in October, and some eight or nine of these little ocean wanderers were shot: they had little fear of man, so little that one was knocked down by the short gaff the fishermen use when hauling in the cod.

I had a long talk to-day with the man at the lighthouse on the subject of our migratory birds. At this season it is no unusual circumstance to pick up birds on the balcony below the lantern, killed by flying against the glass. This is more frequently the case on thick, dark and foggy nights, when the light is in a great measure obscured. Woodcock and wild duck, and frequently snipe, have been found thus knocked on the head, and occasionally partridges and starlings, and other species not probably migratory. Sometimes flocks of smaller birds will on these dark nights flutter round and against the glass like moths, and may be then taken by hand, as they are completely bewildered by the dazzling glare. He had often seen in the autumn, about "woodcock time," flocks of the little goldcrested wren. A temporary and favourite resting-place was the small garden attached to the lighthouse, where he had observed them foraging amongst the cabbages and greens; the next day not one would be seen in the neighbourhood. He told me the woodcocks usually arrived with a N. or N.E. wind. Had once seen some arrive during the day. They alight immediately on landing, either just topping the cliff, or, in stormy weather, dropping at the base just above high water, where for a time they lay like stones in any nook or corner. After a stormy night they are frequently found in the little caves and hollows, worn by the waves at the base of these sea-cliffs. If put up on their arrival they move with a slow and lazy flight, seldom going more than a hundred yards. A single woodcock was this year killed at Flamborough in the first week of October; and six, I heard, killed on the 14th.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire,
November 1, 1867.

Ornithological Notes from Norfolk for August, September and October.

By HENRY STEVENSON, Esq., F.L.S.

(Continued from S. S. 811).

Hooded Crow nesting in Norfolk.—An instance of this fortunately rare occurrence in this county occurred, during the past summer, in Mr. Upcher's grounds at Sherringham, near Cromer. The old birds had been observed on several occasions by the gamekeeper, and on the 26th of August, as Mr. H. M. Upcher informs me, he had an opportunity of seeing both old and young birds himself: he first saw one old and two young ones, and afterwards two more, but whether the same or the other parent bird and a third young one he was unable to determine.

Rosecoloured Pastor.—On the 7th of September I saw a very fine adult male of this species, which had been shot at Hemsby, near Yarmouth, about the end of July, and having been badly mounted at first, was being re-stuffed by Mr. Knight, of Norwich. This species has not, I believe, appeared in Norfolk for the last nine or ten years.

Spotted Redshank.—An immature bird shot near Yarmouth about the last week in September.

Storm Petrel.—During the first week in October, after a succession of strong gales from the N.W., a flight of these birds appeared on our coast, and specimens, as is usual on such occasions, were picked up, either dead or dying, both inland and by the sea; the first, according to date, was picked up dead at Little Fransham, several miles from the coast. Between the 4th and 9th some seven or eight more were obtained on the beach, either at Sherringham or Cromer, and others are said to have been knocked down with stones by the boys and not preserved. On the 7th a single bird was caught alive in a farm-yard at Lexham, nearly in the centre of the county; and on the 9th another was found dead at Hickling, near Yarmouth. At Lynn, as I am informed by Mr. Wilson and Mr. E. L. King, several were reported to have been seen flying in the harbour on the 30th of September, but on the 5th of October a male bird was picked up dead in the marshes between Snettisham and Dersingham, and another was found dead on the mud of the harbour on the 9th. These birds were for the most part in very poor condition, and were probably portions of one large

flock whose appearance, both to the north and south of this county, has been already recorded in the 'Field' and other journals.

Skuas.—About the same time with the little storm petrels, we have had a somewhat unusual influx of skua-gulls, and those chiefly of the rarer kinds. The appearance of these birds, however, may be accounted for indirectly by the extraordinary abundance of herrings off the coast, the parasitic gulls following in the wake of others, at this season, wherever food is more particularly abundant. On the 4th of October a very fine adult male of Buffon's skua and a young bird of the year were shot at Salthouse,* and a second old bird with a young one were seen at the same time. The adult specimen resembles the birds figured by Mr. Gould, in his 'Birds of Great Britain,' having the bright yellow tinge on the sides of the neck; but unfortunately one of the long tail-feathers was shot away and the remaining one is shortened by an inch or two. Singularly enough, another adult bird of this species, killed on Yarmouth beach, about the same date, is similarly injured. In the stomach of the old bird from Salthouse were a few fragments of feathers, apparently taken from its own breast, but no food of any kind, and with the exception of one small beetle, entire, the stomach of the young one was equally empty. On the 4th, as I learn from Mr. Wilson, of Lynn, a female Richardson's skua, apparently, by his description, in immature plumage, was shot on the river-bank near Lynn; and on the 12th, as recorded in 'Land and Water,' an adult male of Buffon's skua was shot by Mr. Dugmore's gamekeeper, at Beachamwell, on land which was formerly warren, and more than a mile from any water. On the 12th also an immature pomarine skua was killed at Yarmouth, the under parts becoming gradually white, and the tail-feathers projecting nearly three inches; and on the 17th a still younger bird of this species, in its first plumage, was shot near Acles Bridge, on the Bure. Besides these I have heard of another Buffon's skua shot at Blakeney about the 20th of September.

Little Auk.—A few storm-driven birds of this species occurred, in different localities, about the same time as the petrels. On the 11th of October I was shown one which had been picked up dead, a few days before, some miles from the coast, and Mr. H. M. Upcher informs me that he received one, on the 5th, which had been picked up in a small running stream at Lower Sherringham, where another was seen but not taken.

* These were stuffed for a gentleman residing at Beeston Regis, but not killed there, as stated by Mr. Gunn (Zool. S. S. 992).

Gray Phalarope.—I have heard of three specimens procured in this county during the present month, of which the first was shot on a pond at North Wootton, on the 5th of October, and with a male killed in the marshes near Lynn, on the 11th, is being preserved by Mr. Wilson for the Lynn Museum. The first was in poor condition, and the other very fat. On the 10th a very plump specimen was sent to Norwich for preservation, which had been killed on the previous day at Beeston, near Cromer. This bird, both on the throat and upper parts of the plumage, still shows traces of its summer plumage.

Cormorant.—An immature bird, also purchased for the Lynn Museum, was shot below the Lynn Estuary, on the 12th of October.

HENRY STEVENSON.

Norwich, October 24, 1867.

India-rubber Boat.—If any of your readers could kindly give me some information regarding the following I should be exceedingly obliged:—I wish to know where and from whom I could purchase, new or second hand, or borrow, an India-rubber boat, to hold one person, or what would be a good substitute for such? Could a good substitute be made of sheepskin, and if so by whom and at what cost? The use I would put it to would be not so much in a piscatorial point of view as for the purpose of birdsnesting on remote Highland lochs, and I should require that it could be carried either in a large game-bag or strapped on to a fishing-basket. The expense of an ordinary India-rubber boat is too great—£15, I think.—*John A. Harvie Brown; Dunipace House, Falkirk, Stirlingshire.*

Ornithology of Berks and Bucks.—As I am at present engaged in a little work upon the birds of these two counties, I should be very much obliged to any gentlemen who are cognizant of the occurrence of rare species in either county, if they would kindly send notices thereof to me. Any facts connected with the Ornithology of these counties, however trivial, will be gratefully received.—(Address to) *Alexander Clark-Kennedy; Eton, Bucks.*

Autumnal Migration at Scilly.—The shooting party at Scilly up to the present time report the arrival of only a few scattered woodcocks—no decided flight; the same remark applies to the Land's End district. In the last week my nephew reports that he saw a large number of black redstarts, mostly in the gray state of plumage, only one or two in the black plumage. Bramble finches had also made their appearance, and also stock doves and a Slavonian grebe (*P. cornutus*).—*Edward Hearle Rodd; Penzance, Nov. 4, 1867.*

Bluethroated Warbler off the Norfolk Coast.—I write to inform you of the occurrence of the bluethroated warbler (*Phanicura suecica*) off the coast of Norfolk. While coming from Christiana to London by the S. S. "North Star," we had observed many birds performing their autumnal migration. The wheatear, titlark and ring dotterel had been seen in mid-ocean flying easily against a light S.W. breeze. The numbers of these migrants increased as, on the 1st of September, we approached

the Norfolk coast, many of them, as the weather was thick, settling on the ship. Among these was a bird which we took at first to be a redstart, as it sat up in the crosstrees, but which, on taking a short flight to the rail of the companion-ladder, was seen to be a bluethroated warbler, a bird of the year, with the blue feathers of the horse-shoe intermingled with brown, in the same state of plumage as many procured two years before in the marsh at Fogstuen, on the Dovre Fjeld. We watched it some time, until it flew off in the direction of Aldeburgh, distant then about twelve miles, where we will hope it found a congenial abode, if indeed it ever reached land in the face of the fresh breeze which just then sprung up.—*J. R. Griffith; Oxford.*

Swallows and Martins dying from Cold.—Having just read Mr. Moor's note in the November number of the 'Zoologist' (S.S. 990), I beg to inform him that I picked up a martin in our garden at Aldeburgh, Suffolk, upon the 24th of September last: one of the servants first saw a bird—a swallow as he thought—fly down and settle upon a young shrub; he then called me to look at it, but by the time I arrived at the spot the bird had fallen from his perch and was lying dead underneath it. I examined this bird, and found it to have died from starvation or cold, probably both. On the 16th or 17th instant I found another martin, which had also perished from cold, close to Darsham House, near Saxmundham, in Suffolk. I observed that many swallows and martins flew with great difficulty about this time (Sept. 20th): I heard of several others being picked up near Darsham, all of which undoubtedly perished from want of food and the effects of cold weather.—*Alexander Clark-Kennedy; Eton, Bucks, November 1, 1867.*

Dates of the Departure of Immigrants for 1867.—The following are the days upon which the bird named was last seen in the county of Buckinghamshire:—

Swallow	October 20.	Lesser Whitethroat	September 20.
Common Martin	„ 19.	Spotted Flycatcher	„ 30.
Sand Martin	September 27.	Wryneck	October 3.
Swift	„ 6.	Reed Warbler	September 16.
Cuckoo	October 18.	Yellow Wagtail	„ 29.
Redbacked Shrike	September 27.	Sedge Warbler (about)	„ 20.
Nightingale	„ 20.	Garden Warbler (about)	„ 20.
Willow Wren	„ 18.	Wheatear	October 7.
Chiffchaff	„ 17.	Redwing (first seen)	„ 26.
Blackcap	„ 18.	Fieldfare	„ 18.
Whitethroat	„ 20.		

I did not take all these observations myself, but I can rely on most of them.—*A. Clark-Kennedy.*

Swallows at Salford.—If you think it of sufficient interest I wish you would mention, in your records of the "ways of the feathered tribe," that our swallows did not leave here in mass till the 25th of October, and that six were disporting about on the 4th of November, and one poor straggler on the 6th, a fine sunny day followed by a sharp frost: I fear the last never got away.—*John Plant; Peel Park, Salford.*

Reparation of a maimed Beak in the Chough.—The following curious circumstance has been communicated to me by an observer in whose accuracy I have the most entire confidence: In the course of last year a tame chough "broke at least half an inch off the upper mandible" of its beak, which after a time "commenced growing again and

is now as perfect as ever." My informant unfortunately did not notice the exact dates of the fracture and its reparation, but I have quoted his words in reference to the occurrence, which may be fully relied on.—*J. H. Gurney.*

Magpie with Yellow Beak.—With reference to the occurrence, in Scotland, of a magpie with a yellow beak, recorded in a former number of the 'Zoologist,' it may be interesting to your readers to be made acquainted with the following:—One day last July while walking with a friend in the neighbourhood of Buckfastleigh, we saw in a hedge-row before us a magpie busily employed searching for food. On approaching the bird it did not exhibit those symptoms of alarm which are generally common to the species, but on the contrary continued grubbing about in a very unconcerned manner. This appearing unusual (as it is a notorious fact that the magpie is one of our most wary birds) I paid more attention to it than I should otherwise have done. We still continued to advance, and it was not until we were about twenty yards from the bird that it imagined it time to be off. It then walked deliberately into the middle of the road before taking wing. While here it was in the full glare of the sun, and I then observed, to my astonishment, that it possessed a bill of a bright lemon colour at the base, but of a darker hue towards the top. I uttered an exclamation of surprise, and called my companion's attention to it, and he agreed with me that he had never seen or heard of a magpie with a beak so coloured. Now comes the question, how are we to account for this colouring? Not to its egg-loving propensities as suggested by Mr. Beckwith, as this bird's beak was of a much lighter tint than it would have been had it been stained with the yolk of an egg; besides, I was close enough to observe that the beak was perfectly smooth and had a very apparent gloss, which it would not have had had the bird been feeding on egg, as in that case it would have been of a dull gamboge colour and destitute of gloss. I do not imagine for a moment that this bird was any other than our common species, as in every other particular it was identical with *P. caudata*. The only conclusion I can arrive at to account for this abnormal appearance is that the bird was affected with some disease of the organs which secrete the horny matter of the beak, and in this, as in other cases, may be attributable to the extreme old age of the bird.—*G. F. Mathew.*

Lesser Spotted Woodpecker near Windsor.—On the 22nd of October an adult male of this species was shot in Stoke Park, Buckinghamshire. The red upon the crown of the head was very bright: I saw it in the possession of Mr. Ferryman, of Datchet, who was preserving it for the person who shot it.—*A. Clark-Kennedy.*

The Gray Phalarope in Norfolk.—On the 9th of October an adult female specimen, in the autumnal change of plumage, was shot at Beeston, near Cromer, and passed into my hands for preservation: its stomach contained the fragments of some minute shells and the remains of some small shrimps, including two quite entire. Two other specimens were also obtained about the same time, one at Lynn, and the other at Elmham.—*T. E. Gunn; 21, Regent Street, Norwich.*

Peacock with White Wings.—I saw a peacock to-day that had six or seven of the primary quill-feathers and about the same number of the secondaries of each wing of a pure white. Is this variation at all an unusual occurrence in this species?—*Id.*

Early appearance of Jack Snipe.—While shooting on the marshes near Rainham, Kent, on the morning of the 23rd of September last, I was surprised at finding a couple of jack snipe. This is, I think, unusually early, as I have not before noticed them till the second week in October. They were apparently both adult birds, with

their plumage rather shabby. The weather at the time was comparatively mild, with a fresh breeze and rain from the south-west.—*W. H. Power; Victoria Park Hospital, October 21, 1867.*

Great Snipe and other Rare Birds near Brighton.—A fine specimen of the solitary or great snipe (*Scolopax major*), which was shot near Lewes, was brought me on Wednesday, October 16th: I took the bird on the following day to Mr. Swaysland, of Brighton. On dissection it proved to be a female, we believe an adult, extremely fat, and weighing nearly seven ounces and three-quarters. The following rare birds have reached Mr. Swaysland for preservation:—Richard's pipit on the 9th of October; two examples of Richardson's skua on the 7th and 14th of October: all obtained near Brighton: a spotted crane, at Pevensey, on the 15th of October.—*T. J. Monk; Mountfield House, Lewes, October 22, 1867.*

Spotted Crane on Longridge.—I saw to-day, in the possession of Mr. W. Naylor, of Whalley, a spotted crane (*Crex porzana*). This specimen, a female, was shot on Longridge, Lancashire, on the 17th of October. The spotted crane is a rare visitant to this part of the country.—*H. W. Feilden; Pleasington, Blackburn, Lancashire, October, 31, 1867.*

Spoonbill on Northam Burrows and Black Redstart at Barnstaple.—I beg to record the occurrence of a specimen of the white spoonbill in North Devon. It was shot one day last week on the Northam Burrows, near Bideford. I saw it in the shop of Mr. Rowe, gunsmith, of Barnstaple. As the bird had no occipital plumes I judged it to be a young bird of the year. A black redstart has been frequenting our premises here for some days. It appears occasionally on the top of the house, and sometimes in the garden, and is every now and then noticed flitting before the windows on the look out for flies, after the manner of a flycatcher or wagtail.—*Murray A. Mathew; Barnstaple, November 8, 1867.*

Surf Scoter and Firecrested Regulus (Birds of the Year) at Scilly.—The packet has brought over the above specimens for preservation to Mr. Vingoe. The surf scoter shows its character in the form of the bill, which is very decided when compared with the others. There is another character, apparently specific, which is well shown in Yarrell's figure, and that is the extension of the frontal feathers half an inch down the centre of the ridge of the upper mandible: the other two species have not this character. I see that the description of the young surf scoter is very meagrely given by our authors: this specimen has a very well-defined white spot between the eye and the bill, and a similar one just behind the eye; the upper part of the head is of a very deep brown, almost black by lamp-light. The other bird is, without doubt, an immature firecrest from the well-defined white mark over the eye, which the goldcrest never has.—*Edward Hearle Rodd; Penzance, October 28, 1867.*

Arctic Tern near Gravesend.—On the 3rd of October, whilst our yacht was brought up in the Lower Hope, I had the good fortune to obtain a fine specimen of this tern, a young male in immature plumage. It was flying at the time in company with four or five others of the common variety. I had seen them playing about the yacht for more than half an hour before they came within shot.—*A. H. Smee; 7, Finsbury Circus.*

Skua on the Thames.—On the same day (October 3) I saw two specimens of the common skua; the first just opposite Greenhithe, the other by the Chapman Light; the latter when observed was chasing a common gull, which it soon

compelled to disgorge its food. Although I have been sailing on the Thames the whole summer these are the only two skuas I have seen. Is it not very unusual for these birds to come so high up the river?—*A. H. Smeë*.

Sandwich Tern at Whitby.—In the last week of August I had a fine male specimen of this tern given me by a friend, who had shot it on the beach between the harbour and Kettleness. At the time it came into my possession the breast still retained a decided rose-red tinge, which disappeared after a few days. Keble, the local bird-stuffer, informed me that he had never seen or heard of this species of tern occurring previously on the Yorkshire coast, although he had lived at Whitby for the last fifteen years, and most of the rare birds shot in the neighbourhood pass through his hands. When at Mr. Keble's house he was busily engaged in setting up a young specimen of the common seal, which had been shot on the sands close to the town.—*Id.*

"*The Wide-awake Tern.*"—To what species do the terns of which Dr. Collingwood gives so interesting an account (*Zool. S.S.* 979) belong?—*Edward R. Alston; Stockbriggs, Lesmahagow, November 7, 1867.*

Little Gull at Flamborough Head, Iceland Gull in Orkney, and Tithys Redstart at Minehead.—On the 23rd of October a little gull was killed near Flamborough Head. On the 29th of October an Iceland gull, sent in the flesh from the Orkneys, was found to contain several grains of barley in the stomach, no other remains of food being perceptible. On the 31st of October I saw a male *Tithys* redstart in a small garden near the beach at Minehead, where it remained sitting on a low apple-tree till driven away by another bird, which seemed to me to be a house sparrow. I visited the locality two or three times afterwards, but could see no more of the redstart.—*J. H. Gurney; November 6, 1867.*

Enormous Lobster.—I have just taken a lobster (*Homarus vulgaris*) three feet long, which incredible statement I explain in this way: it measured one foot six inches from rostrum to tail, over all, and its anterior pair of legs were each one foot six inches long. It measured one foot two inches round the carapace; the large claw was ten inches in circumference and the smaller one seven inches. Its weight was a trifle over nine pounds. I have seen a lobster with a larger claw, but never altogether so large a specimen.—*Thomas Cornish; Penzance, September 21, 1867.*

Gibbs' Spider Crab at Penzance.—I note the occurrence of Gibbs' spider crab (*Pisa Gibbsii*) here on Thursday, the 3rd instant. The specimen is small, and of a dirty white colour. It was caught in about eight fathoms water.—*Id.; October 3, 1867.*

PROCEEDINGS OF SOCIETIES.

ENTOMOLOGICAL SOCIETY.

November 4, 1867.—Professor WESTWOOD, Vice-President, in the chair.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—
'Transactions of the Linnean Society,' Vol. xxv. part 3, and Index to Vols. i.—xxv.;

'Journal of the Linnean Society,' Zoology, Vol. ix. No. 36; presented by the Society. 'Proceedings of the Zoological Society,' 1866 and 1867, Part 1; by the Society. 'Journal of the Agricultural Society,' 2nd series, Vol. iii. Part 2; by the Society. 'Annales de la Société Linnéenne de Lyon,' new series, Vol. xiv.; by the Society. 'Annales de la Société d'Agriculture, &c., de Lyon,' 3rd series, Vols. ix. and x.; by the Society. 'Mémoires de l'Académie des Sciences, &c., de Lyon,' classe des Sciences, Vols. xiv. and xv.; by the Academy. 'Bulletin de la Société des Naturalistes de Moscou,' 1866, Nos. 3 and 4; by the Society. 'Mémoires de la Société de Physique, &c., de Genève,' Vol. xix. Part 1; by the Society. 'Mémoires de l'Académie des Sciences, &c., de Belgique,' Vol. xxxvi., and 'Bulletins,' 2nd series, Vols. xxii. and xxiii.; by the Academy. 'Schriften der physikalisch-ökonomischen Gesellschaft zu Königsberg,' Vols. vi. and vii.; by the Society. 'Stettiner Entomologische Zeitung,' 1867, Nos. 7—12; by the Entomological Society of Stettin. 'Memoirs read before the Boston Society of Natural History; being a new series of the Boston Journal of Natural History,' Vol. i. Parts 1 and 2; and 'Proceedings,' Vol. x. and Vol. xi. sheets 1—6; by the Society. 'Annals of the Lyceum of Natural History of New York,' Vol. viii. Nos. 11—14; by the Lyceum. 'Proceedings of the Essex Institute,' Vol. iv., Vol. v. Nos. 1 and 2; by the Institute. 'Proceedings of the California Academy of Natural Sciences,' Vol. iii. Part 3; by the Academy. 'An Inquiry into the Zoological Relations of the first-discovered Traces of fossil Neuropterous Insects in North America; with Remarks on the difference of Structure in the Wings of living Neuroptera,' by S. H. Scudder; by the Author. 'View of the Lepidopterous Fauna of Labrador,' and 'Revision of the Fossorial Hymenoptera of North America, I. Crabronidæ and Nyssonidæ,' by A. S. Packard; by the Author. 'Notes on the Lepidoptera of America,' No. 1, and 'Descriptions of American Lepidoptera,' No. 1, by A. R. Grote and C. T. Robinson; by the Authors. 'Neuroptera and Orthoptera of the Province of Moscow' (in Russian), by B. Oulianine; by the Author. Sepp's 'Nederlandsche Insecten,' 2nd series, Vol. ii. Nos. 9—16; by M. Snellen van Vollenhoven. 'Bidrag till Reduviidernas Kännedom,' by C. Stål; by the Author. Hewitson's 'Exotic Butterflies,' Part 64; by W. W. Saunders, Esq. 'Entomological Papers, 1862—1866,' by the Rev. Hamlet Clark; by the (deceased) Author. 'Catalogue of Longicorn Coleoptera collected in the Island of Penang by James Lamb, Esq., Part 2, and 'Diagnostic Characters of some new Genera and Species of Prionidæ,' by F. P. Pascoe; by the Author. 'Apterous Lepidoptera,' by J. Jenner Weir; by the Author. 'Illustrated Natural History of British Moths,' by Edward Newman, Nos. 6—11; by the Author. 'The Zoologist,' July to November; by the Editor. 'The Entomologist's Monthly Magazine,' August to November; by the Editors.

The following additions by purchase were also announced:—"Genera des Coléoptères d'Europe," livr. 132—135. Gerstäcker's 'Bericht der Entomologie, 1863 und 1864,' Part 2.

Exhibitions, &c.

Mr. M'Lachlan exhibited a species of Mantispidæ from Bahia; he believed it to be the female of *Trichoscelia notha*, from the male of which, described and figured by Erichson, it differed in being half as large again, in having the anterior femora unarmed, the abdomen ochreous beneath, and provided with a long flexile ovipositor; in all other

characters it agreed with Erichson's insect. The species was especially remarkable by the lobate dorsal ridge of the abdomen, and by the greatly dilated and compressed posterior tibiae, resembling the pollen-bearing organs of a *Bombus*.

Mr. M'Lachlan exhibited, on behalf of Mr. B. Cooke, two examples of gynandromorphism. The first, a sawfly, *Dolerus madidus* of Klug, the left-hand side presenting male characters, the right side female characters. The second, a Trichopterous insect, *Limnephilus striola* of Kolenati, in which the palpus, antenna and wing on the right-hand side were of the male form and on the left side of female form, whilst the abdomen was wholly female: this specimen was captured by Mr. Cooke near Manchester.

Mr. M'Lachlan also exhibited two monstrosities, both sawflies, which he had received from Prof. Zeller. One was an example of the rare European species, *Hylo toma fasciata* of St. Fargeau, in which the left posterior tibia was two-jointed, the second joint being greatly dilated. The other, a specimen of *Tenthredo scalaris* of Klug, with five wings, three on the right side, the anterior and posterior being perfectly normal, whilst the intermediate one combined the neural characters of both.

Mr. Bond exhibited three recent additions to the list of British Lepidoptera, namely, *Psyche crassiorella*, *Bruand*, *Grapholitha ravulana*, *H.-S.* (exhibited at a previous Meeting, but then unnamed), and *Coccyx vernana*, *Knaggs* (*Ent. Mo. Mag.* vol. iv. p. 122).

Mr. T. W. Wood (who was present as a visitor) exhibited a number of pupæ of *Papilio Machaon*, *Pieris Brassicæ* and *P. Rapæ*, exhibiting various shades of colour corresponding with the colours of the surfaces to which they were attached; and read the following

Remarks on the Coloration of Chrysalides.

"All Lepidopterists are probably aware of the very great variability in the colouring of the chrysalides of butterflies, and I am able to state, as the result of some years of observation, that their colours are more or less derived from the objects in their immediate vicinity. It is obvious that this assimilation of their colours to their surroundings is of great use to them, tending to their concealment and consequent immunity from the attacks of enemies during their period of exposure in a helpless state. The specimens of chrysalides on surfaces of different colours which I now exhibit are, I trust, sufficient to convince you of the truth of this statement. I find, as the result of my experiments, that the skin of the chrysalis is photographically sensitive for a few hours only after the caterpillar's skin has been shed, and, as might be expected, by putting the specimens in the sunshine at the time of changing, and surrounding them as much as possible with any desired colour, the most successful results have been obtained. Under these conditions the specific markings are almost entirely overpowered if necessary to the assimilation of colour; and these markings are, in fact, entirely overpowered in the exhibited green varieties of *Papilio Machaon* and *Pieris Rapæ*. I have not had an opportunity of seeing the former species in its natural haunts, but the latter I have observed, and have found the green variety of the chrysalis on a green leaf, and on a door which was painted green (specimen shown). There are also before you green specimens of *Pieris Brassicæ* which were under a vine on the side of a house which was of a stone-colour, with many others taken from the adjoining side of the same house, where there was no vine to affect their colour, but only the

somewhat dirty stone-coloured surface; I particularly noticed that there were no green specimens to be seen on this side, although their number was very considerable, and they were attached at various heights, some very near the ground, and others at the house-top under the projecting eaves.

"Some of the darkest specimens shown on blackened surfaces were exposed to a very subdued light in a dark corner, and the detached ones so strongly suffused with black were taken from a tarred fence. One of the chrysalides of *Pieris Brassicæ* on a white surface, now exhibited, is almost an albino. I also exhibit green, reddish and dusky chrysalides on surfaces of similar tints. Specimens kept in the dark would be interesting; I have one of *P. Brassicæ* which was placed on whitish wadding in a box from which light was excluded, and it is of a light colour, although possessing all the specific markings, but from this solitary example no conclusion can be drawn. Mr. A. G. Butler has informed me that he also has made some experiments with chrysalides of *Pieris Rapæ*, and has procured a reddish tinge by means of a red surface, besides other colours. The gilded chrysalides deserve mention here; those of *Vanessa Urticæ* I have hardly ever found except when concealed by nettle-leaves; those on fences, walls, tree-trunks, &c., being of similar colours to those objects, and mottled more or less. The fine chrysalis of *Vanessa Polychloros*, when amongst foliage, is coloured like a withered elm-leaf; I have not unfrequently found it of a light reddish brown, with a cluster of metallic silver (not golden) spots on the back at the juncture of the thorax with the abdomen: this colouring also gives place to mottled grayish when the individual is on a wall or other object. The metallic appearance is probably of service in giving the insects an uneatable look, and is not necessarily connected with the possession of *Ichneumon* in their interiors, as one or two of my entomological friends think, for I have had very fine butterflies out of very metallic chrysalides; indeed I consider this to be the normal colouring, it being the most beautiful by far. I would venture to suggest another reason why the gilding, when amongst leaves, is of service in the way alluded to: it is this—that the *Vanessa* chrysalis is quite loosely attached, hanging only by the tail, so that, even if it could assume the green colour by which it is surrounded, it would be rather dangerous to it than otherwise, for it would then appear to birds very much like a green caterpillar swinging in the air, but as it is it looks more like a piece of gold or brass than anything else, and birds probably do not think of touching it. There are doubtless many instances of the absence of variability in chrysalides, but I think they would all be found to be mimics of some disliked or dangerous insect. The chrysalis of *Aporia Cratægi* is very conspicuous and not very variable, but I have been much struck by its strong resemblance to the caterpillar of the currant-bush moth (*Abraxas grossulariata*), as both are speckled with black on a whitish ground, and the moth caterpillar is extremely abundant in the same localities, and is probably disliked by birds. The pupa of the moth is very remarkably coloured with yellow bands on black, giving it a waspy appearance, and I recollect being afraid when a child to touch it, thinking it would sting. I feel convinced that by the proper use of gilded surfaces the gilded chrysalides of *Vanessa*, and perhaps of other genera, would be obtained, and I hope to be able to try the experiment next season; also to obtain colours with coloured glass, as it is probable that the strongest effects would be obtained by that means. There can be no doubt that disguise will be found to be carried to as great a length in chrysalides of butterflies as in any other class or stage of insect life, as their evading observation, and consequent security during a

considerable portion of their lives, must depend *solely* upon this power which they unconsciously possess."

Mr. A. G. Butler (who was present as a visitor) stated that he had obtained a red or rosy chrysalis of *Pieris Rapæ*, which had undergone its transformation in a piece of scarlet cloth; and pupæ upon glass were generally of a pale slate-colour.

Mr. J. Jenner Weir said that, whatever might be the explanation, he could speak to the fact that metallic chrysalides were for some reason or other obnoxious to birds and free from their attacks.

Mr. Bond combatted Mr. Wood's theory; he had had thousands of pupæ of *Papilio Machaon*, and had often had the brown variety of pupa on a green ground-colour, whilst in some seasons he obtained no brown specimens at all: as regards *Pieris Rapæ*, he had noticed that the pupæ of the second brood were generally rather paler than the first brood; but in the same green-house, the doors and wood-work of which were painted white, he had found chrysalides of all the exhibited colours, many of them quite as dark as those shown by Mr. Wood on black surfaces; on the same wall, built of particularly red bricks, he had found all the colours except the red; on the same twig of the common garden rocket, subject to precisely the same external influences, he had often noticed three or four pupæ of *Anthocharis Cardamines*, and at times the twig would produce red, green and white varieties, while at other times all the pupæ were of the same colour.

Papers read.

The following papers were read:—

"A Revision of the Australian Buprestidæ described by the late Rev. F. W. Hope," by Mr. Edward Saunders.

"Descriptions of some new Species of Diurnal Lepidoptera," by Mr. W. C. Hewitson.

"A Monograph of the Genus *Thais* of the Family Papilionidæ," by the Rev. Douglas C. Timins. The following seven species were enumerated and figures of each exhibited:—

"1. *Thais Cassandra* (Boisd. Icon. pl. iii. fig. 1, 2; Hübn. Pap. fig. 910—913. *T. Hypsipyle*, Godt. Pap. Fr. ii. pl. 2 C, fig. 1, 2; larva figured by Boisduval Rambert et Graslín, Coll. Icon. Chenilles Papil. pl. ii. fig. 1—3). The larva feeds on several species of *Aristolochia*: it varies much in colour, but is generally pale reddish, spotted with black. The pupa state lasts from November to March; the pupa is reddish brown, the wing-cases yellowish. I have found this species at Cannes and Hyères: it is of very short duration and very sluggish, frequenting marshy grounds, where it flies lazily from flower to flower, settling with expanded wings. Near Cannes it is very common in some marshy meadows on the road to Auribeau; at Hyères it is comparatively rare; near Horace Vernet's chateau, about ten miles from Hyères, it is plentiful on a patch of marshy ground. This species usually appears on the wing in March, about the 15th, and after a fortnight few good specimens are to be seen. The time of appearance, however, varies much: in forward seasons it appears in February, but in 1864 and 1865 it was not on the wing until April. Slight varieties occur, the black markings on the upper side of the anterior wings being more or less diffused, and sometimes the ground-colour of these wings is almost white. This was the case in some specimens which I reared at Oxford in 1861, from larvæ collected at Hyères in

1860. I have reared *Cassandra* in December by placing the pupæ in a very warm situation; the perfect insects, however, offered no variation from the ordinary type.

2. *T. Hypsipyle*. This species is closely allied to *Cassandra*; indeed Boisduval's opinion was that the two were merely local varieties of one species. This, however, is not the case, because *Hypsipyle* and *Cassandra* occur in the same localities, though at different times. *Hypsipyle* is generally (not always) paler than *Cassandra*, at least in the female; the black markings are less diffused; there is in the female a crimson dot upon the third black marginal band counting from the outer edge of the anterior wings; the second crimson spot on the hind wings is absent in the female. The antennæ are brown with a blackish club in both sexes of *Hypsipyle*, but black throughout in *Cassandra*. This species may be considered, I think, identical with the *Thais* (*Papilio*) *Polyxena* of Ochsenheimer. Two constant varieties are described by Boisduval; his *var. A* differs from the type by the narrow costal bands of the anterior wings, the second of these bands only being of the usual breadth: this *var.* is said to occur in Calabria. The *var. B* is described as being of a deep ochre-yellow and as possessing three or four red points on the fifth costal band: this variety has been found commonly in the Morea, and may, I think, possibly be a distinct species. This species is further distinguishable from *Cassandra* by its yellow larva, with black dorsal band, six rows of spines, yellowish red bordered with black, and (according to Hübner) a lateral series of black points, forming a triangle. The pupa is not unlike that of *Cassandra* in form, but is grayish brown in colour. The larva of *Hypsipyle* is found about August, feeding on *Aristolochia rotunda* and (as Boisduval says) on *A. Clematidis* also. The perfect insect flies over marshy places in April. It thus appears later than *Cassandra*: its flight is sluggish. I have found both the type and the *var. A* at Cannes.

3. *T. Caucasica*. This is said to abound near Smyrna in April and May. The larva and pupa seem to be altogether unknown.

4. *T. Cerisyi*. This species is easily distinguishable by the long tails on the hind wings. The larva and pupa seem to be unknown. This species occurs near Smyrna, and also in some of the islands of the Grecian Archipelago: it appears on the wing in April and May, and is of short duration.

5. *T. Henrietta* (new species). Expands 2½ inches. Antennæ and palpi black; thorax black, spotted with yellow. Abdomen also spotted with yellow. Wings deep golden yellow; fore wings with the base black, then a red costal spot bordered with black, then a black costal band, then another broad crimson spot edged with black, then a black spot, then two small red spots, then a row of black crescents, and a second row of crescents reaching to the edge of the wing. Hind wings have the base black, the disk marked with crimson and black, the nervures black, a crimson spot on the upper margin and a row of five large crimson spots bordered with black, and a row of yellow crescents deeply edged with black. The fringe of all the wings is dark golden yellow. A single specimen of this beautiful insect, taken near Smyrna, was in the cabinet of the late M. Meissonier, of Hyères: that gentleman informed me that it was a new and undescribed species: he wished me to describe and figure it, and lent me the specimen for that purpose shortly before his death.

6. *T. Medecicasta* (*Papilio Rumina*, Hübn. tab. 354—395; *P. Rumina-australis*, Esper; *La Proserpine*, Ernst, Pap. d'Europe). The larva lives on several species of

Aristolochia: it is usually of a brownish yellow colour, with many longitudinal black lines, and six rows of spines, orange-coloured. The pupa is not unlike that of *Cassandra*. This species passes the winter in the pupa state, and appears on the wing in May. I have found it near Grasse in May, also, not uncommonly, near Hyères. Its flight is not so sluggish as that of *Cassandra*: it is partial to localities where the beautiful rose-coloured *Cistus* (*Helianthemum album*) grows. There is one hill in particular near Hyères upon which this plant is found in remarkable profusion, and here *Medecicasta* may be seen in some plenty. I have observed that this insect seldom flies after 2 or 3 P. M., while *Cassandra* is partial to the afternoon sunshine, and may be seen on the wing until 4 P. M. or even later. There is a variety of this species figured, under the name of *Thais Honnoratii*, by Boisduval (Spec. Gen. des Lépid. plate 1 B, fig. 4), which appears only to be found in the neighbourhood of Digne: it is smaller than the type; the crimson spots are much enlarged upon the lower wings, and upon the upper wings are much more numerous (and also larger) than in the type; the second and third costal bands are very small. This variety is exceedingly rare, and specimens fetch about £1 each in the Paris dealers' shops; I have been told, however, by an old French entomologist, that they have been known to fabricate this variety, by selecting small individuals of *Medecicasta* and dexterously colouring them by means of crimson scales borrowed from other specimens, the black scales of the second and third costal bands being neatly removed and their place supplied by yellow scales. I have followed most authors in giving *Honnoratii* as a variety of *Medecicasta*: if, however, this be the case, it is rather curious that it should only have occurred in one locality out of several in which *Medecicasta* abounds. The statement, moreover, that it has been reared from a larva identical with that of *Medecicasta* must be, I think, received with caution. I knew a French collector who had at one time two thousand arvæ of *Medecicasta*, and not one produced *Honnoratii*.

7. *T. Rumina*. This species is pretty closely allied to the preceding. It is, however, somewhat smaller, and frequently of a darker yellow, but this difference is by no means constant. The best distinctive marks perhaps are as follows:—a white sub-diaphanous spot near the apex of the fore wings (occasionally absent), the absence of a crimson patch on the lower edge of the fore wings, and the much greater extension of the black marks near the outer edge. The outline of the fore wings is also different from that of *Medecicasta*, the curve of the costa especially. The larvæ of *Rumina* are grayish, with small longitudinal black markings and six rows of short reddish spines. The pupa is ash-coloured, in form similar to that of *Cassandra*. This species is chiefly found in Southern Spain, Portugal and North Africa: it has, however, occurred (very rarely) near Hyères, and it is said near Cannes also. April and May seem to be the months for its appearance in the perfect state. It is subject to considerable variation, and I am not certain whether the specimens from Cannes are not in reality varieties of *Medecicasta*."

New Part of 'Transactions.'

A new part of the 'Transactions' (third series, vol. iv. part 2), published in August, being the fourth part issued for 1867, and containing a continuation of Mr. Baly's "Phytophaga Malayana," was on the table.—J. W. D.

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